Dec 1929

Personal Journal

Ellsworth P. Killip

Peru - 1929

Return to Smithsonian
Institution
Washington, D.C.

or
Instituto Anchieta
Huancayo.

This is not the Official
journal of the expedition.
A.C.S. keeps that and if
it is anything like his
record of our Colombian
trip it will be well
worth publishing in
full, and without change.
Mine are just casual
notes; hours of arrival
and departure are entered
for the information of
later followers of our route.
Other incidents merely
reflect my temper at
the moment of writing.

Mon. Mar. 25, 1929 - ~~Mar. 27~~.

Lt. Wash. 3pm. Spent stay in N.Y. at A's. Total baggage weight was 1215 lbs.

Tues. Mar. 26. Hopkins at 10 a.m. Then went to consulates to get visas for al. Brazilian free but Peru & Ec. charged $5.00 & $3.00 respectively.

Wed. Mar. 27. Rechecked baggage at dock. 1 canvas bag ripped. Old cases aren't holding any too well & should be ditched. Grace Co. allowed us 800 lbs. free & gave us 25% reduction on fare. Damned white! Bridge with Eleanors.

Thurs. Mar. 28. Sailed from Pier 33, Brooklyn on Santa Teresa at noon. Fine day, bright sun. This was our weather for all the succeeding days of the trip. Comparatively smooth to Cuba, then Caribbean rather rough. Watched to Sun. (31st), rounded Cape Maisi at noon Mon. (Apr. 1). Bar opened soon after leaving N.Y. but drinks were so tasteless till Panama was reached that little was drunk. Apparently there was a scarcity of supply & they were trying to make it go!

Apr. 7 see back of book

Wed. Apr. 3. Reached Cristobal 6:30 pm and went ashore with Al & Olsen (see card). Big party, during which sent A.K. a postcard. Back to boat 2 am.

Thurs. Apr. 4. Left boat at 5:30 a.m. Breakfast at Cristobal & train at 7 over to Panama. Nice to see region about Frijoles & Monte Lirio again. Saw Wynne & Thurgood at Admin. Bldg. Then crossed over Hill, went to bank, & out to old Panama. How Bella Vista has changed! Sailed 5:30 p.m.

Fri. Apr. 5 Going down west coast.

Sat. Apr. 6. Crossed Equator 11 a.m. Neptune ceremonies in p.m., duching after shampooing. Fortunately we escaped. Boxing by crew in eve.

Sun. Apr. 7 Talara at 7 a.m. and ashore. Dry barren place; no wonder Haught collects little there. He met us. Left about 9. In Humboldt Current & cooler.

Mon. Apr. 8. Salivery at 10. Landed in stiff sea, hard work. Took auto along beach at good speed & back to

Trujillo. Nice old historic
town, a Humboldt locality.
Collected our first 20 numbs
on road back - probably
common things. Sailed
1 p.m.

Thurs. Apr. 9. Ar. Callao
10 a.m. Easy work before
officials. Briggs (secy Amer.
Embassy) + Gray (consul)
met us on shore, took us
ashore, D. stayed to watch
bag., we going with Briggs
to Hotel Maury, Lima. Took
gates raised for entering
car. Reporter for El
Comercio (Sr. Portal)
took us around, introducing
to Sr. Manzanilla and Sr.
Miró Quesada, to whom we
had letters from Rowe.
Evening went to Exposition
but nothing doing. Few
beers in a street café,
reminding one of Paris. Sr.
Manzanilla was once
Vice President of Peru.

Wed. Apr. 10. Univ. of San
Marcos, oldest univ. in
America. Small herbarium
but not much named.
Saw roots of cube but
unnamed! Rest of day
spent on receiving and
making calls, looking
for things to buy, etc.

Weberbauer called in pm. + visited some time. Hinte a kick to see this most famous of 20th Century collector in S. Amer. Told us cake was Tephrosia, but I still am not certain. Here's his biography in brief. Arrived Peru 1902, back in Berlin about 1908 but not since. Has collected in nearly all parts of country but apparently not along our Ucayali route. Was in Tarapoto 3 yrs. ago but didn't do much. Movie in eve.

Thurs. Apr. 11. Resolved to accomplish something today, for we didn't have much to buy. Never again leave anything for the field. Lima stores have much, but not some things that are in Cartagena or Bue. Market early but found little of interest. Really common fruits as bananas, oranges, etc. Then looked for stores. Called on International Petroleum. (Rumbo, head, and Reed). Also Grace Co. Lunched at Club Nacional with Miró Quesada. Fine meal then rode to country club and new residential part of Lima. Swell city!

Fri. Apr. 12. Botanical Garden with Sa. apiazu. 4 species of Passiflora thus collected. Very good place. Sr. Llona, Secy. Geog. Soc. called with hundreds of pima plants. from Yauli & vic. Interesting stuff but, strange to say, not for sale. B.M. to Inca Museum. Inca Indian is director. Big thing as 3000 yr. old mummy was unwound for us. Specially good in museum were the Inca vases (2nd Pre-Inca period) representing plants (corn, peanuts, chirimoya), animals, birds, fish. Big storehouse of stuff not yet touched.

Sat. Apr. 13. Rushed around doing last-minute things - bank (St. Dewey), Grace Co. (Bush), Intern. Petroleum (Reed), etc. B.M. to Weberbauer's & watched his method of putting plants in alcohol (lays on paper, sprinkles over alkies, seals in tin box, & takes to Lima for usual drying). Movie.

Sun. Apr. 14. Callao to ship baggage. Jefe de Estacion, Sr. Curso, great help. 50% discount by R.R. much appreciated. Auto sent way up San Cristobal, a mt. overlooking Lima. Only

one plant worth taking, tho some each seen. Turn to bull fight. 7 bulls & 2 horses killed. Am quite hardened tho. All took many pictures.

Mon. Apr. 15. Lv. Lima 7:30 am on PR. Got parlor car seats. Wonderful ride on great r.r. Reached Rio Blanco 1 pm. Collected rest of pm. Principal plants Calceolaria, Lupinus, Valeriana pinnatifida. Cold at night.

Tues. Apr. 16. Walked down to San Mateo, took train back to Chicla, station above Rio Blanco & walked back. Also good collecting.

Wed. Apr. 17. Went up valley above Rio Blanco in am. a few plants. Took 1 pm train up over crest of Andes. Snow nuts. everywhere. Thru 65 tunnels on the whole trip from Lima and many switchbacks. Last tunnel took up to other side and we saw headwaters of Amazon. White limestone cliffs everywhere. Yauli would be good collecting for puna stuff. Oroya at 5 pm & met by D. who had gone on a day earlier. Autos waiting to take us to Tarma. Very winding road but good drivers. Reached Tarma 7:15 pm, to Hotel Bolivar for night

Thurs. Apr. 18. Sr. Garcia, a friend of D's, invited us to stay at his house. Nice family. A room for sleeping & one for working. Meals at Hotel B. All day spent unpacking & working on plants.

Fri. Apr. 19. All day spent working on plants. D went to Huancayo.

Sat. Apr. 20. With Sr. Garcia and a man to hills south of city. Got quite a lot of stuff but much of it is probably common.

Sun. Apr. 21. Followed road up river, getting Polygonoffia rosea. Then followed valley back to town. Bathed in river. Dressed up for first time in a week, and had small party at hotel with Roberts, Westinghouse man.

Mon. Apr. 22. Went down river but got little. This region we have certainly exhausted. Too high for shrubs or trees - only planted Eucalyptus, Polylepis, Salix, Prunus cerasus, Buddleia, & Elaeagnus. Rest common weeds today.

Tues. Apr. 23. A day of just hanging around, as the auto doesn't go to Concepción till tomorrow. Went to the college & saw their small collection

just leaves pressed by the primary classes. English teach, Sr. Carpio called on us later & watched us take off 2 bundles.

Wed. Apr. 24. Trouble in getting auto. Finally convinced our host, who had promised to get one, that we would pay ~~could~~ good price. Consequently got started 6 Hp to Concepcion. Left 11:30. ~~Trail~~ Road went straight up mt. to south, then for several miles across puna, then down to Montaro Valley. First good view of puna. When auto stopped for water or repairs, we collected. Many "cushion" plants, & good Werneria (?), Geranium, Gentiana. At base of road down from puna are weirdly eroded cliffs, resembling our Garden of the Gods. Montaro Valley very beautiful, reminding me of Canca V., the hills on each side not proportionately so high over valley floor, which is about 10,000 ft. Reached Concepcion about 4 p.m., staying over night at Pension Recreo, a new hotel, very clean, with fine terraced gardens, over which the duena took us. D. came in eve. from Huancayo.

Thurs. Apr. 25. Am. visited monastery of Santa Rosa de Ocopa, one of Peru's most famous. Father Superior showed us all over, incl. a 13,000-vol. library with many old & rare books. Long talk with bishop who promised us all aid on a future trip to Montaña east of Ocopa. Gave us 3 fine maps. Collected on way back, especially along stream ~~head~~ near monastery. Left at 3 p.m. for Huancayo, arriving about 5. (Hotel Internacional). Expected to go to Huanta next day but after many long & exasperating talks with H. citizens, decided to go due east to Montaña. H. is famous for its market but somehow I'm not keen on town.

Fri. Apr. 26. Am. spent discussing what to do. Finally gave up going east. (Mayor Garland agree to give caminos but uncertainty of getting mules thereafter). As no train left for Huanta till Monday, decided to accept invitation of Paul ~~Ledig~~ Ledig, head of Magnetic Observatory of Carnegie dept. Terrestrial

Magnetism of Wash., 11 mi.
W. of Huancayo. Went over
finding him & Mrs. L. very
charming & hospitable people.
Worked up plants of last 2
days & rigged up a press.
Sat. Apr. 27. Big day. Left
Obs. in La camion, picking
up D. at Huancayo, going up
Acapalco Valley, E. of H.
More vegetation than heretofore
in this dry Peru, but did not
collect much on way up.
Parked car at crest of road,
with glaciers of Mt. La Juntay
(Mount of Perpetual Snow, as
known by natives of H.) nearby.
Went down to a cold lake, from
which I took a boy up to
one glacier, collecting a Col.
(Distichia, several sp. Gentiana,
3 sp. Lupinus, including one
big one of L. alopecuroides type,
many grasses, 3 Valerianas
which particularly interested
me, 1 Calceolaria, 1 Elaphoglossum
& several other ferns, etc, etc.)
Snowed up on glacier but
photoed some. Returned
slowly, still collecting. Also
Ledig meanwhile went to
another, larger glacier
& photoed extensively. Collected
more or less on way down
to Hacienda Acapalco, where
we had tea (incl. W. & S.) Here

in all. We saw sheep going
them a dip. There are 21000 in
this ranch. Ranch hand
coming down road, had also
from many animals in way.
Sun. Apr. 28. Went with
Lelio to market. Thousands
of Indians with their wares.
Lined up along Calle Real &
in market places. Worked
till late in eve. on plants &
packing.
Mon. Apr. 29. Up at 5 a.m. &
7:50 train headed for Huanta.
at Km. 16½ train was
wrecked, all cars but the last
(ours) going off the rails,
on edge of canyon 100 ft.
high. Cold; after waiting for
cars to come up for photos,
we 3 walked on to next
station, Ingahuasi, collecting
some things, caper. Calceolaria.
Unique lunch given us by
good Indians of corn, beans,
& potatoes, but tasted especially
good. Bath in cold stream.
~~Then~~ Train came up at 6 p.m.,
arriving at Mejorada (Marcaval
Cáceres) 9:30. (Hotel Internacional).
9 hrs. sleep.
Tues. Apr. 30. Up at 1 a.m.
& by camion with 15 passengers
down Mantaro Valley
(very narrow gorge) to
Huanta. Very fine road

but naturally got some thrills as it was narrow & canon deep. Ar. Huanta 9 a.m. (Hotel Inca); set up stoves, called on subprefect & tried to arrange trip to montaña. On ride over a mule got loose in front & ran & galloped 3 KM ahead of us at fast pace.

Wed. May 1. Dickering about mules. No one wants to rent so subprefect will commandeer them. Bought provisions. Visited church & religious order. Fine garden. Went with Sr. Pastor, secy to subpref. to soccer game between Huanta & Ayacucho. Regulation uniform; many players

Indians. Labor Day & a comedy vaudeville in subprefectura patio.

Thurs. May 2. Soldiers have been bringing in mules all night for us & there is quite an assortment; also enraged owners. Spent a.m. pacifying them & paying rent. Left at 2 p.m.; 4 riding mules & 4 for cargo. Road goes s. & (more e.) directly up, then ± level along a valley. Darkness before finding a house. Finally reached 2 abandoned Adobe huts without roofs. Slept there. 5 minutes walk to s. was

Cinquchaca Hacienda, but
thot it was farther. 2 leagues
this day.
Fri. May 3. S.o & went on
ahead to summit of second
ridge, collecting, especially an
puna at crest. Road, which
is very good & better than
Colombian mule roads, followed
± level, then steep climb to
highest point of road (barometer
not working well, but this about
4200 m.
14000 ft. Trouble with mules'
cargo; equipment poor and
breaking. Reached Parggara
± 3:30. (3 leagues for day). This
is feast of Holy Cross and
all along route Indians
were blowing their cana
pipes and drinking. Got 5
horses at Paroga & finally
by threats & money persuaded
Indians to give us some
food. Eve. some 25 Indians
arrived for fiesta. Had a
drink of chicha with them
& passed out cigarets.
Sat. May 4. Hung around
till mules were loaded,
1 1/2 hrs.' job. Road went
gradually up (had descended
to Paroga at ± 3600 m.) to
another crest (± 4000 m.);
good puna & lunched there.
Now starting actual
decent of eastern slope of

Andes. Low-hanging clouds beneath & a drizzle. Trees & shrubs appearing and all p.m. would have been good collecting but impossible with mule team and not knowing when to expect night. At a cemetery saw several drunks, one of whom the Gobernador, was being helped home by his sons. Stayed at his house this night (Pampalca, ± 2800 m., several scattered huts here). Mules are going better. (4 leagues).

Sunday May 5. 9 am disgusted with this passing turn

good country & not collecting. So up early & before breakfast collected above huts. (Lupine, Pavonia, Acaena). After breakfast left alone on foot, collecting a lot until overtaken by caravan. Saw little new thereafter. Traveled along river near Hano, which appears to be rather larger than most places en route but not said to be a good stopping place. Reached Garrapa about 3 p.m. (±1500 m.) also several scattered houses. Stayed at a poor tienda kept by a little

Indian girl. S.o 9 collected in a swkel valley nearby, dense woods o our first palmies, aroids, Peperomias, etc. (± 4 leagues).

Mon. May 6. Left early on foot and got in some fine collecting (Thibaudias, Gesnerias, Siparunas, etc.). Met Padre of Aina on road who gave us letter to his caretaker that we could live in his house. Reached Aina 1:30 pm (3 leagues) (±800 m.) Several huts, a church, & padre's house with sheet-iron roof. Loaded up my road collections which amounted to 331 numbers. As this is a good hdqts. and road is impassable for mules cargo from here on, I am to stay here, collect, and work on S's plants while he & D. go on to Kuepiteriki, on Apurimac River, 2½ days farther on.

Tues May 7. S.o 9 worked all day on collections. "Cube" is growing in our yard but D. thinks it is not the powerful plant of farther on. This is Tephrosia, perhaps toxicaria, tho it seems slightly different.

Wed. May 8. S. & D. left early for Apurimac. I have an excellent guide, Victor Poso, who took me to the hills above Ayna. Very fine for orchids, the large proportion not in condition. Got a lot, anyway, & many other things. Worked on these till supper.

Thurs. May 9. Am. worked on plants; then down along road to Puente Machenta, 1/2 league east, 4 bundles collected.

Fri. May 10. Went early to hacienda of Sr. Conrado Lama, then up valley nearby. Hard going over cleared lands. Got three bundles. Just before leaving 3 bundles arrived from S. Seems like old times at California.

Sat. May 11. Worked all day on S's 3 bundles from Estrella & mine of yesterday.

Sun. May 12. Rained. to hills so. of here, generally to headwaters of Río Ayna. Collecting not as good as we never struck a real orchid woods as on May 8. Best things Oplioglossum & Passiflora serrato-digitata. Got 3 different Citrus trees for Swingle. Worked on these in pm. New stove gave trouble but finally fixed it

somewhat. Afraid to use it this night, tho. Boy arrived from Kuripitiribi with 7 bundles from S., 6 letters. They have another "cube" but bus. only & not sure what it is. Perhaps Lonchocarpus, Derris, Ecastophyllum, or Sapindaceae - compound lvs. Boy spent night on my porch - nice Indian kid. Gave him 5 Kp to take to S.

Mon. May 13. Worked on S's. plants all day. Smell lot, especially trees & shrubs. But we are too far apart so many things aren't keeping well. Bought some cube root from a man from Aporuinac county.

Tues. May 14. Followed stream down to R. Pieri, but got only a few plants. 2 p.m. S. & D. returned, covered with mud. They say the Aporuinac is a broad river, nearly like Magdalena. Francisan Monastery just a few cells so they used tent. Dense jungle everywhere. Plants mostly in fruit as flowering time said to be Feb. The real cube - cube almendon (starch) is a low tree. Not found native there as Indians have used up all. Some cultivated. Takes 4 yrs. to grow to size roots can be used for fishing

Wed. May 15. S. & I worked up his plants and then up to orchid woods of May 8. Certainly is fine

there. Got some I didn't find in condition before.

Thurs. May 16. Hung around waiting for plants to dry as we leave tomorrow. Close-up photos of ourselves not shaved.

Fri. May 17. Left Aina, S. of T. in advance at 7 a.m., collecting as far as tienda at which we stopped May 5 night. This place is part of general hamlet of Ccaracpa, main part being further west. Here was a simpatico boy (brother of girl who sent it?) who gave us oranges, eggs, and a drink. Mules caught up & we hurried on, with lunch at Ccano, to Pampalca, reaching there for night about 4 p.m. Rainy & cold. Gobernador was sober but as usual quite a bargainer.

Sat. May 18. S. of T. left Pampalca about 7 a.m., going up steep road, and collecting quite a lot. This was the comparatively humid area which we passed thru so hurriedly on the way over. Now I think we collected everything. However, just as the mules caught up, I was finding some swell little puna things. Of course we should have collected more "minutely" on the punas, but we never had time traveling with cargo. Made good time today and reached Pampa 2 p.m. Stayed there for night as

the next place is over the divide and a hard climb. Very cold this pm., put on all clothes & crawled into bed for afternoon. S. & 9. visited with natives in the "kitchen", giving all our presents, as handkerchiefs, bells, mirrors, & various ornaments.

Sun. May 19. Left, D, S, & 9., about 6:30 a.m., up steep grade, over divide between Apurimac & Mantaro basins, & a second divide. Mules caught up as we were lunching at Anyacacha. Rode short distance farther, then on foot to collect to Huanta, which was reached 4 p.m. Good to have a regular meal again.

On this return we had our 3 riding mules, one for Morales, 4 cargo, and 3 extra cargo from Sr. Lama. Latter arrived about 6:30 p.m. and in evening we rigged up the 3 stores.

Mon. May 20. Worked up plants & camino, and bought Indian-woven blankets. On trip back lost convenient notebook Mrs. White & Yogi gave me for 1922 trip. Had in it addresses & a few references. Just before leaving Aina, looked over a set of books belonging to Padre Perez - 14 volumes publ. by Franciscans largely dealing with their work among the Indians of the

montaña. I had copied from the Quechua vocabulary in Vol. 13 several common words & the numerals. Fortunately memorized latter that night, & here they are

1 - sue	30 - quisuisa-chunga
2 - iscay	40 - chusgo - chunga
3 - quimsa	50 - pichca - chunga
4 - chusgo	100 -
5 - ~~pusa~~ pichca	
6 - socta	
7 - chanchis	
8 - pisac	
9 - iscon	
10 - chunga	
11 - chunga - sue	
20 - iscay - chunga	
21 - iscay - chunga - sue	

These volumes ought to be bought for Washington. Will see if I can get them at Huancayo. Publ. at Lima up to 1920. The trip to Kimpitiriki was very satisfactory on the whole, tho I shall never get over regretting I did not go from Ocina to Kimpit We got 1151 numbers, many of them doubtless of greatest interest. Tues. May 21. We are waiting in Huancayo for plants to dry and for an auto to Mejorada. Just hanging around, drinking beer. Stepped out with Sr. Pastor in fm., drank, etc.
Wed. May 22. Everything has dried except one bundle, which

took this off and found all dry. Wrote Wm + Hopkins (long report on cube to Wm). S. + J. drank beer all a.m. and it had an unusually heavy kick for I don't remember lunch on the early p.m.

Thurs. May 23. Left Huanta 5:30 a.m. in camion, having obtained permission to ride with the baggage. Was a glorious early morning, with a full moon and Venus, the morning-star, as large as I have ever seen it. Was more impressed than before with the xerophytic vegetation north of Huanta. Reached Mejorada about 10:30, after breafast at Anco (½-way house). checked baggage, went for a very cold bath in Río Mantaro, took train at 2:30 pm to Huancayo. (This time no wreck!) Baggage to Mot. Andino + night at Hotel Internacional. Met Scott Forbush there, from Magn. Obs., and we had a small party.

Fri. May 24. S. + J. dropped till Tedig took us to Obs. Planning to hang around over week-end. The Tedigs certainly are hospitable.

Sat. May 25. Went up Acapalco Valley a little way on a family picnic. Swell food - hot dogs, roasted corn, etc. Collected a few nos. The country has dried up a lot since my visit a month ago.

Sun. May 26. Packed a box with dried plants for Washington. Had expected Grace people in Huaraz would do this, but they are damn lazy & indifferent, unlike Grace people in Lima & Colombia. Read "Bridge of San Luis Rey."

Mon. May 27. Left Huaraz at 10:30 a.m. for Yarma. Collected only two plants en route, an Astragalus (on which I broke my valued knife) and a Senecio. Reached Yarma 2:30 p.m. having had one collision on the way. Glad to see our friends the Garcias. Sr. Sealdo, the big merchant, very helpful. Packed in p.m.

Tues. May 28. Sent off a trunkful of plants to Grace at Lima for forwarding to Washington. Left Yarma 11:a.m. by auto. Road first 2 or 3 miles gradually down the Rio Yarma (3100 m) as far as Carpa Pata (2380 m), a station of Cerro de Pasco

for developing water power.
There called on Mr. Bryant from whom we had an invitation to visit. (May go back). Road then drops from 2380 m., right down side of valley, to Huacapistana (± 1000 m.?). This is a famous botanical locality, Lorentzen having collected much here. Looks like a good place to stop. Reached La Merced about 3 pm. The ride is wonderful tho one can't get over the thot of what would happen should the driver make a slip or a wheel come off. One long tunnel, one place built out over the water at side of steep cliff. La Merced ± 625 m. After looking the hotels over, we decided on the Shepherd, where the proprietor gave us a sort of a store newly built. Makes fine lodgs. Great to be where it is hot once more.

Wed. May 29. Rained heavily and S. & T. went north along road about 2 mi, then up a wooded valley. Got 8 bundles – more really for we ran out of tapes and squeezed things in.

Thurs. May 30. Dennis + I went by boats to the big bridge over the Rio Colorado on way to Perreira. Short way up met a fine fellow who went with us a short distance to a Chunchu house where we got a boy - a girl to carry our things. Then up to Bavalo's mission. Found him teaching school. His boys are an intelligent lot but, in spite of Dennis' prediction, they smoke. One boy, Hippolito, took us up thru some wonderful woods to a chaco where barbasco (Cracca toxicoria) was growing. Got a lot of typical forest plants, so many that we didn't worry much about getting back, and did not reach road till 5 pm. No cars so started walking. When darkness came stopped at house of Capt. Soto to see if he could get a sleep there but there were no accomodations. However, he gave us a ~~lato~~ lantern and with this we reached La Merced about 9 p.m.

Fri. May 31. Took S. as far as Capt. Soto's house and brought back plants we had left there. Worked on these all while S. collected.

Sat. June 1. Hippolito took D. & me to a chacra owned by his mother & united to Chinchus. It is across the Chanchamayo Valley, up to a ridge, a sharp drop down, then up, a valley to a pampa. Here are growing some 35 plants of cube. Same as at Tsinpitirihi, but the latest branches more scandent. The woods here were very good, but as it was a long way there, I did not collect much until the last valley, which was very rich in ferns. This was one of the best woods collecting I have ever had.

Sun. June 2. Worked on yesterday's plants, no collecting done. Carlos Schunke, one of Macbride's friends, was in town and we established most friendly relations. He, and Meier, the German photographer here who is developing my films, came to lunch. Good party. Meier had developed 12 rolls of films for me, and they came out fine.

Mon. June 3. S. & I. went back over first part of trail of June 1 as I had refrained from collecting there. We got a lot of things. Took

our first swim in the Chanchamayo, a fine sandy bar 2½ Km. below here.

Tues. June 4. Worked up yesterday's plants. 3:30 p.m. went to San Ramon (Gran Hotel), met Carleton of Aviation Service here; saw his many curios (arrows poisoned, feathered things made by Indians, photos etc.) Interesting evening with him (many drinks) hearing about air service adventures over these jungles.

Wed June 5. Drove out to aviation field with Carleton and watched him & two others take off. Would like to have been around. Went from San Ramon back up Tarma Valley to Huacapistana, one of Weberbauer's historic localities. Took with me Jose Cueno Vargas, Carleton's man, who proved to be one of the best boys I ever had. We went up a trail near the hotel first, but it was so overgrown that too much time was wasted cutting our way thru. Descended & crossed the river, where we got many numbers.

Thurs. June 6. Went up direct from Huac. (1800 m.) to the new road being built by C. de P. people, a climb of ± 800 m. Scarcely worth while, as the trail lead mainly thru dry, grassy country. Saw a sweet valley far below, near Huaac., so went back to that and got a lot of fine things.

Fri. June 7. By auto to Carhuata, a C. de P. station at 7700 ft. Fine lunch with the chief, Bryant. Then, with my boy and one other, went up a valley (Santa Rosa), getting 120 numbers, especially fine Lobeliaceae. Carhuata is a collection of huts. Bryant has a Jap cook, wonderfully good, squab for dinner! Bryant and I sat around till late drinking the wines and rum bought for Ambassador Moore on his recent trip to this region (He was Bryant's guest at lunch one noon).

Sat. June 8. We all went by mule on a 3-hour ride along the new trail, as far as recent landslides had wiped away the road.

Went around this on foot by descending a deep valley. Men working on road and soon after a landslide carried one down to what was probably his death. Had lunch at Camp No. 2, of C. de P., and followed the road, very dangerous in places because of slides. However, collecting was not so hot, much of the environment having been covered on the two preceding days. When at our place Y June 6 above Huac, boy & I descended to Huac. and took auto to La Merced. Found S. had gone yesterday to Salumbe's hacienda to collect.

Sun. June 9. Worked on my collections of yesterday, the preceding ones having been sent back to S. to attend to. He returned with a enormous lot of plants — our record so far for one day, either here or in Colombia. Drank cerveza all the p.m. and, gloriously lit, went to a movie.

Mon. June 10. Helped S. with his plants but feel like hell. Wrote Miss Shields, WBMS. Feding, Lama, and Pastor, sending photos to some.

Thurs. June 11. Very hard to get boys to work for us around here, particularly in this the coffee-gathering season. So went alone on foot toward San Ramon, across river, and up, up, up to Schumbi's finca. (Hacienda Chirijaca) Worked in valley below his house in pm. Agreed to buy his collection of plants and animals for U.S.N.M.

Wed. June 12. Took trail to ridge above Schumbi's house. Collected only the things I shot & didn't get. Really is no trail first part of way, and on return got lost — really lost. Did the usual thing by heading for the nearest stream. Followed this down — a mere trickle — thru very rough country, getting hot and clothes very muddy, and finally wound up at the stream I was at yesterday. Quite relieved as it would have been hard to go way on to Perene River. Left Schumbi's about 1 p.m. and collected on way back to La Merced. Long hike, alone, with lots of plants!

Thurs. June 13. Worked on my plants in Am., then packed for Colonia Perene. Already when wire recd that it would be more convenient for us to come tomorrow. So just hung around. Wrote Hopkins & Mapon.

Fri. June 14. Left early Am. with all our baggage, S. & I.; (Dennis stied in Lima), arriving Perene by auto 1½ hrs later. Are living in the "hotel", a fine headquarters, very open and well screened. Two stoves going. S. & I went up a valley at head of road near the hotel. Saw a big green snake asleep on a tree branch. Collecting was fair. These tropical jungles are a gamble: sometimes fairly trees loaded with orchids; again, just a limited number of accessible plants, those rare but locally common, the high trees impossible to collect. Perene Colony is last outpost of civilization, at junction of Chanchamayo (from South) & Paucartambo (from North) rivers, which here form the Perene River, flowing eastward. The bldgs. are modern, and the sitting room has a

victrola, with fine operatic and symphony records. Many books, English, Spanish, & French. Sr. Victor Valleriestra and his brother run the place. We four and the storekeeper dine together.

~~Sat.~~ Sun. June 15. I went along the road for a.m. down Perene Valley. Too open and soon ran into immense coffee plantation. S. went out in pm. and I worked at home.

Mon. June 16. I went down to Paucartambo River in a.m. & collected along the banks. Rather good woods, with several orchids. In p.m. we took auto to Camp No. 2 & then by mule to Camp No. 3, arriving 4 p.m. (about 20 Km.) Cock fight in progress which we watched.

Mon. June 17. By mule with Sr. Vergani, his little boy, and peons, to a spot along Perene River, about 10 Km. east of Camp 3. Here were ferried across river by a painted Indian in a canoe. Then several Km. (another 5 km) walk eastward to a chacra of Chunchos where we found a plantation of "barbasco"

or 'cube', but here it is
Cracca toxicaria and they
know nothing of our church
'cube'. Mary gaily painted
o feathered Chumchus here
whom we photoed, returned
by mule to a spot about
halfway from river ferry
to Camp 3 and walked
rest of way, collecting
quite a lot.
Tues. June 18. Walked back
to Camp 2 in the rain
and found the woods better
than we had anticipated.
Auto met us and took us
to main camp, where in
p.m. worked on our rather
large accumulations.
Drank much beer and
talked a lot at supper.
Hope Sr. Valderrama wasn't
peeved.
Wed. June 19. Finished our
plants of the side trip
in a.m. P.M. went up
Pancantambo Valley and
along Pichis Trail for a
few yards. Found good
collecting along river at
end.
Thurs. June 20. 8. and 9
early by car to bridge over
Pancantambo, then up
this valley on west side
partway to San Luis.

Dense forest. Here and in
p.m. a short distance along
road toward La Merced got
7 bundles. Met a white-
bearded man, German
(grandson) (address Zapatero).
Sr. Grossmann, at beginning
of Pichis Trail, a
butterfly collector. Knew
useful plants, and showed
us one, called by Chuncho
"verap" and used, the
stem, for poisoning fish. It
is a species of Serjania or
Paullinia. We collected
herbarium specimens, and
many stems to send Staves.
Recd letter from Dennis.
2 priests & several other men
at supper. Sr. Vallerestra
returned.

Fri. June 21. Worked on plants
all day. Let me correct
something. The "boss" here is
Sr. Victor Vallerestra. He
has interests in Lima and
has been there about a
month, his two sons,
Don Pepe and Alberto
running the place. Certainly
are among the most
brilliant and energetic
South Americans I have ever
met.
Sat. June 22. Loafed all
day as we can't collect
any more here and dry the
plants. Vallerestra showed
us two species of rubber

and other things near here. Wrote Joyce, Isetimore about cube analyses, Morton, and note to W.R.M.

Sun. June 23. Hung around in camp. This life of waiting for Dennis and all ready to leave is hell. Bryant & Carleton came over in p.m., and we four had a quiet beer party. Went back with them to Lamereed for dinner and San Ramon for night.

Mon. June 24. Got up feeling rotten but remembering a date & had made the night before with my former boy, Vargas, to climb up to the cube plantation "waited June 1 and get roots of the plant. Took car to L. M., clothed, then on to bridge where car waited while we made a 3-hr. hike, up, up, up, then down and up, to the cube place. Accompanied on each valley by a man living at Nenby chaco who gave us lunch. Back to Colonia for dinner.

Tues. June 25. Dragged with hanging around 8.0 I went over a nenby mule

trail he had been over before. Then descended by rough trail to the Paucartambo bridge. 9 muleers in all, showing how we have splumbed this place unless we strike out on a 2 or 3-day side-trip. Wire came from D. saying he had malaria, and would be delayed 2 weeks. Hell! Anyhow we decided to go on Friday!

~~Wed. June 26~~. (The Prefect of this Dept., Jimin, came for a visit. Rather young fellow and very simpatico. Continued our packing in pm.

Wed. June 26

~~Thurs. June 27~~. In a.m. 8.o 9. drove over to L.M. to get some things, and saw about mules. P.M. packed some more Played several card games in eve. with Prefect and Don Pepe. [NB. People are Don Victor Valle Riestra o his 2 sons, Don Pepe and Don Augusto].

Thurs. June 27. Drove to bridge and waited for mule man to show up but he didn't. Had good talk with Dr. Grossmann. He is 68 yrs. old, and has children 5 and 8 yrs. old, their mother a Chundu.

told me more about
fish poisons. There are
used by Indians (1) Coñape, -
says resembles coffee tree.
Comes from par riland. He
knows little about it. Perhaps
our Cube A. (2). Cube or Cuy-
clearly Tephrosia toxicaria,
the ~~plant~~ species used here. (3).
Verap - the 2 species of
Sapindaceae which we
got near Pancartambo
bridge. The one without
spines is the stronger.

He claims to know
much about valuable
plants of the montaña,
being able to speak
chuchu he has learned
many of their secrets
about plants & animals.
Says this their vocabulary
is relatively small, their
words for plants & animals
would fill a volume.
Says curare is a woody
vine with large nodes.
Says the Indians reduce
heads of their victims by
wrapping some plant around
them & pulling them near a
fire. Tells of a plant
which will kill a dog
but not a chicken. +

~~Friday June 20. Everyone left~~
~~the Colonia, +~~ (Some excitement +

in the evening. A wire had come earlier in the day to Prefect telling of an Indian uprising in the Pachetea county, sent by the Subprefect of Puerto Bermudez; said Indians had killed several civilized Indians, and he feared they were marching on P. Bermudez. In evening came another wire, repeating serriousness of situations. The Prefect ordered 80 or more soldiers from C. de Pasco to come to La Merced & proceed to P. B. Makes it interesting for us, as we have to go for P. B. Certainly we kept our ears open listening to the telephoned telegrams. We shall go and if it gets too bad, Sr. Valle Riestra will advise us to return.

Fri. June 28. The Prefect left for C. de P. and we, with all our baggage, went to the bridge over the Paucartambo where we transfered to mules and started over the famous Pichis Trail. It seems that for two weeks we have been the guests of Sr. Valle Riestra, and they would take nothing. What hospitality! Would we

do as much for foreigners visiting the U. S.? Well, we started on the 8-day mule-trip, to be stretched into 10 or 12 days by going slowly & collecting. The first 5 Km. was very good, level & dry, but suddenly we began to wade thru mud and this kept up till 4 p.m. when we reached Yupoz (Km. 46; alt. 1360 m.), with a short stop for lunch at 1 p.m. The road leaves the Pancartambo Valley about Km. 10, and climbs steadily but gradually, upward to an alt. of 1600 m., then descends to Yupoz, a fine tambo where we were cordially received. The mail caravan and several people for the mail boat were there so we had quite a crowd.

Sat. June 29. The woods around here look so swell that we have decided to spend a full day here. A boy, darn good one, from the tambo guided us up to a Chuncho hut where barbasco (Jephrosia toxicaria) was growing. Then we went on up to

the forest. Very fine collecting, with ferns predominating. Got ___ number. The trail yesterday had not proved very hot till we got well up; then lots of new things appeared. So we got the boy today to take a cut thru the woods to strike the road near the summit of yesterday. Arr worked out just right and we retraced our route from the summit back partway, then a short-cut to Yapas. A most satisfying day.

Sun. June 30. (Not till I wrote this heading did we realize today was Sunday). Left Yapas at 8:15 am. Friday. (Should have said it rained the last five days). Road very muddy all day; mules just plashed thru mud, covering us too. Did not stop for lunch; just ate hard-boiled eggs and chocolate on the mules' backs. Did not dismount till 2:30, then we waded (± waded) for an hour to Cuenas, a fine tambo where, within 5 minutes, we were drinking beer, the

only place, we fear, we can get drinks en route. Got busy at once putting ~~in~~ yesterday's plants in presses for the stoves. (Yesterday pm. we put them in driers).

Mon. July 1. The dueño of the Jambo, Sr. Christi, took us out to a place where he said we would find marvellous collecting. And it was! After going a short distance south thru woods which suggested the Yapas forest of yesterday, we cut eastward and soon entered a real ~~sfp~~ open sphagnum swamp, the first I have seen in S. Amer. Looked much like Bergen Swamp (N.Y.). The "floor" plants characteristic were sphagnum, two white lichens, an erect Trichomanes. The prevailing shrub was a Melastome, suggesting Meriania, about 3. feet high, flowering in Aug. but now with a few pink flowers. There were many many terrestrial orchids, 2 Aradas, 2 Wenmannia, Epidendrum, Clusia, Befaria, etc. Another fern was the cinnamon fern, of the North. The place covers several acres and should be explored more thoroly than

we did. I shall never cease to regret that we did not spend more time there. We reached the bog about 9 a.m., and as our guide was hungry and wanted to return, we did so after an hour. Got back to the tambo at 10:30, with ___ numbers collected, a record for us. We put these plants in the rest of the morning, after lunch I went up to a chunchu chaco with the dueño, getting Cuacca again but little else.

Tues. July 2. Left Eneñas, S. & T. on foot at 7:45 a.m. to collect. Quite a different vegetation appeared, Gesneriaceae being especially interesting. Found a Centropogon with flowers in a dense head, 3in diam., with stiff bracts. We walked very fast to keep ahead of the cargo, collecting whenever we saw anything worth while along the camino, but not entering the woods. Mules did not catch up till 11 a.m., and we rode till 2 p.m. when we reached

Tambo "2 de Mayo" [#96, old system, #71, new]. While we were riding the vegetation suddenly changed when we entered rock country again, first time on this trip, more like the high mts. Some of the cliffs were bright blue [copper?]. As we had used damn near all our paper, this whole new region had to be uncollected. [Resolve: never to take too little paper again, and never ride a mule again when there is plenty of time to reach a tambo before dark!]. This tambo is also simpatico, and we had a good supper. S. went out an hour in the p.m. while I worked on plants.

A word about the numbering of these tambos. Originally the Km. numbering started at La Merced; now it starts at the bridge over the Paucartambo, 25 Km. from La M. Hence the places have two numbers as well as fancy names; thus:

Day	Old nos.	New nos.
1 Yapas	46	21
2 Eneñas	75	50
3 Dos de Mayo	96	71

		old nos	new nos
4	Porvenir	118	93
5	San Nicolas	153	128
6			
7			
8			

Wed. July 3. Left Dos de Mayo, S.O.9. on foot, at 8:30, the rather late start being due to the fact we took dried plants off the stoves which had been going all night. Banks were well cleared and creeking for at first, but soon things appeared, all of those which we missed on the road yesterday. Nudes overtook us about 9:30 and we ordered ~~sent~~ our riding ones to go on and wait for us at 11 a.m. Rain started and kept up till 2 p.m. Wasn't bad while walking but got chilly while on mule back. Finally got off and walked so as to keep warm. Were certainly wet and muddy when we reached Tambo 118 (Porvenir) at 3:30. A large Tambo house with four sleeping rooms and a commodious dining room. Comida was ready for us and went well. Only changed driers on a few plants as tomorrow we must leave early on the long journey to San Nicolas.

Thurs. July 4. Celebrated by taking the longest days

ride of the trip; and the first half in the hardest of rains. 8.0 9. left at 7:15 on foot. Collecting was good. At 3 Km. out we came to a fallen tree over the road. We continued on but finally decided it was better to return to the tree and help clear the road. Took us about 2 hours to cut ~~the~~ a path large enough for the mules with cargo to squeeze thru. It had been raining hard all the time and we were soaking wet (and very muddy!). My trunk had to be opened to get out the axe, and there was the bottle of Pisco. So we all had stiff drinks, felt better, and haven't had any bad effects from the drenching. The rest of the trip had to be made almost entirely on mule as, going fast, we could not reach San Nicolas till 6 p.m. Consequently we passed many good things - a green Bromeliad, green Thitandsia, blue "Ruhe", another "Ruhe" most peculiar - epiphyte with two long tubular

purplish (?) flowers, a
stubby epiphytic orchid,
etc. However, we grabbed
quite a bit as we went
along. ~~...~~ Part of the trail-
where the Vaccinaceae were-
was thru bare cliffs. Here
looked unusual here, too.
So far this is the only
real stretch we have
missed. San Nicolas you
can see — or at least three
large white-trunked trees
near it — from the crest
of a hill 10 Km. away,
the road going back to
the head of the Río
Maragua. This crest
with a preceding one nearby
mark the divide between
the Perene and Pichis
basins, the view to the
north with shoulder
hills being most welcome.
Reached San Nicolas at
6:05 p.m. This tambo is
not quite up to the four
others. Food and service
just as good, but there
are too many domesticated
animals, chickens, dogs, and
pigs, as well as countless
insects, inhabiting the
living and sleeping rooms.
Feel like celebrating the
Fourth, but only a few

shots remain in the bottle and these must be saved for medicine.

Fri. July 5. Both of us worked hard on the accumulated 8 bundles of plants of the last three days. Many onlookers - Chunchus and the ever-present children of this tambo. At all these tambo are telephones and we get quite a kick listening to the conversations. As at home the women start in talking to their friends (here at other tambos) as soon as their morning work is done. If it is to places back of us, inquiries are made as to the progress of the army of 36 men who are on their way to fight the rebellious Chasavis. If it is to place ahead of us, our progress is reported, and the dueños are requested to have food and beds ready for us. Today I tried to get some more pisco sent us from Puerto Yessup, but "no hay" there; learned we could get it at our next place so that's that. In pm. a chunchu boy guided me

them woods back to the road of yesterday. Got 7 bundles in ~~3½~~ 4 hours, little duplicating. Principal things were ferns, aroids, Rubiaceae, Piperaceae, Gesneriaceae, & Melastomaceae.

Sat. July 6. Took dried plants off and did not get away till 8:30, S. & I. on foot. Collecting very good and by the time the mules caught up we had two bundles. More more Gesneriaceae! Had gone a short distance on mule when ~~S's mule~~ the bank gave way just after I had passed, carrying S's mule about 100 yds. straight down the bank. S. got off in time, Thank God! I probably would have gone down with the mule. The arrieros rushed down the bank to rescue the beast, which was unharmed. S. & I. went ahead on foot but soon the others overtook us and we rode. Collecting rotten, fortunately, for we had decided to ride right on and not collect. We missed nothing as the man grabbed the very few good things we saw. Reached Azipazi

River about 12:30, and were ferried (poled) across in a balsa by an Indian. Mules walked over. At far bank is the Tambo Azipuzú, a fine looking place, where a telegram from Dennis, saying all was OK for his air trip, awaited me. I wired him OK with us. Then we walked the remaining 5 Km. (muddy trail!) to Santa Rosa (173 Km.) which we reached at 2:30 p.m. One of the largest places we have struck - bamboo structure and on stilts.

Rigged up stoves and took a much needed bath in a nearby stream.

Sun. July 7. We are certainly swamped with plants these days. Last night we put in three packages of mine of July 5 leaving four others which I worked on in a.m. while S. was out collecting. While I was working, the arriero watching me, we heard a roar like a blast furnace door being opened. Rushed into the bedroom where the presses were and found everything in flames, the fire creeping up the bamboo

wall. The whole house was of bamboo, it should be said. Fortunately there was a big bucket of water in the kitchen and this we poured on the fire, children bringing up additional water from a stream some distance away. Soon we had it under control but what a mess our plants were! Straps, ropes, curtains, and press-ends all burnt. The two presses ~~were~~ smouldered for some time and much water had to be poured on them. Then I started to straighten them out. As we had duplicates of nearly every number, a fairly decent specimen (and usually two) were saved of nearly everything. The dulena certainly was a good scout, saying the bamboo slats were very hard and would not burn easily, and she was most sorry that so much of our work had been lost. She refused to take any extra pay for the damage done. S. returned about noon with several bundles. He had found a plant of these "cube"

cultivated back of the tambo. Before leaving we had several rounds of pisco, and mule-riding (left at 1:30 pm.) was fun. Felt brave! We did little collecting that afternoon but there was little to be seen. Certainly these lowlands, tho more livable, are not as rich as higher altitudes. Reached ~~Pa~~ Tambo 188, Meriatiriari, at 5:45, finding a simpatico dueño, who gave us a sweet fish dinner. Certainly rate this place "A", tho the Colonel said you had to depend on your own supplies. Did not open baggage as we want an early start in the morning.

Mon. July 8. Left, after an avocado & breakfast, Meriatiriari at 7:30, 8.09 on foot. Sat about a pressfull by the time the mules caught up, and little thereafter. Should have said that when I was rummaging thru my trunk a scorpion-like animal stung me. Was painful for a short time but a chuncher said it wasn't poisonous so I didn't worry. About 15 Km.

out we dismounted and took a short-cut over a hill, saving a Km. & kept on walking and reached Puerto Yessupe, the end of the Pichis Trail, at 12:45, S. & the cargo arriving at 1 p.m. So the Pichis Trail is behind us! Later, on the Ucayali boat, I shall write a resume of the trip, plants collected, etc. [See under date of July —]. Dine tambo at P. Yessupe, a few yards from the Pichis River — on high stilts. Our advance baggage was here, and we had everything brought up to our rooms. Glad to see brand-new "boards" and driers! By 4 p.m. we had three stoves rigged up, and we then worked over the plants from the fire — a slow job.

Tues. July 9. Three months in Peru! We have a total of 4723, including the last of the Pichis Trail plants (the latter totaling exactly 800) which we put in today. This is the glorious

tropics, warm and sunny, this rather cool at night! In the pm. we took our very muddy ~~bags~~ cases, bags, etc., to the river, and washed everything. I wore my old muddy clothes for the job, getting them fairly clean.

Wed. July 10. S. went out in am. to forest back of tambo and along trail to P. Bermudez. In pm. I followed up a river which flows into the Pichis just above here, upstream being a little west of south. It was mostly a gravelly stream bed habitat with dense thickets along the banks. The stream bed characteristic plants were a large-flowered Cassia [?], Bacchairis with narrow leaves, a yelow ? Ipomoea which crept on the sand and often climbed high over on the shore shrubs. Among vines, were a Dioclea [?] with showy blue flowers, two Passiflora, one perhaps P. mixbi and the other P. popenovii, but barren, several ? Ipomoea, including a long-tube white one, interesting shrubs and trees were Acacialla, Lupredtia,

Pachira (with rimmose fleshy white flowers, several Rubiaceae and Melastomaceae. It was rather hard going, walking on small round stones, then fording the streams. On returning found the mail and passengers from downstream arriving. Two missionaries, Mr. & Mrs. Clark, were among them and it was nice to talk English again. Their order has a mission a day's canoe trip below P. Bermudez and we were invited to stay there. For no reason at all, S. got opened our last bottle of Pisco, and finished it by 11 p.m., the latest we've been up in weeks.

Thurs. July 16. S. went across river and saw cube, collecting some, in am. I walked along shore downstream on this side a short distance toward end of p.m. after work was done. Got only a few things but found that striking Mimosaceae, with horizontal branches, in flower, the filaments bright pink. Found a small Scroph. with blue flowers.

Fri. July 12. Descent back over my route of July 10, hoping to find a change of habitat above the point I turned back at before, but there was little new, only 7 numbers, and we feel this place is exhausted. Packed in p.m. and loafed around on beach, going in every few minutes.

Sat. July 13. Took off ears stoves and finished packing. There were more than enough packets of dried plants for one trunk so we put a few in the food trunk. Got into a dugout canoe about 20' long and 4 ft. wide. Four boatmen, one a Chinaman in native garb, but he was supplanted by another man later. S. of J. in middle on a bag of plants. The bill for 5 days at P. Yessey was only 25 soles, ridiculously cheap. Canoe cost 4 libras. At the first shallow rapids the men hopped out to pull. So did we, much to their surprise for apparently most passengers are too high hat to wade in the water and pull the boat. This happened ten times. Several times the boat which got into a

swift current and almost
get out of control. Once
it was carried too far to the
right bank and dashed
under branches, on trunk
no. 8 (with the few ~~dried~~
packages, about 8, of dried plants)
and the steersman going
overboard. He passed by us,
carried swiftly on by the
water, then the trunk came
and crashed onto him. He
dove and came up safely
the other side. We grabbed
the trunk and held on till
a couple of the men could
pull it in. At the first
beach we stopped to dry
what we could. The
plant packages looked
most disheartening; some
of them contained the
plants which had already
passed thru the fire at
Santa Rosa. On the whole
it was a glorious trip
down. The sun was
real hot, and we rolled
up our sleeves to get as
tanned as possible,
succeeding pretty well.
The boatmen loafed along,
twice throwing dynamite
in the water, stunning
fish, then diving for them.
Got 14 fish the first time.

Before the second shot they threw pieces of plantain in a deep pool to draw to the surface the "paco" a round, thin fish, of exceptionally fine eating. When they saw some bubbles and heard the dynamite. They got the paco, and there was much joy. Reached Puerto Bermudez at 3:30 p.m., and were given a private house, Everything fine here. Good meals at Jambo "Bueda de Sabuso". Looked over the plants that fell in the river; they seemed all shot, but we put them over the stove that night.

Sun. July 14. Had a pleasant surprise: the plants from the river drying were all right, only the paper was really wet and this dried overnight. So I took these off and worked all day till 2:30. S. going out with a boy to see "cube" down the river a few miles. Thunderstorm came and for some hours there was a real tropical rain. S. returned just as it was over, reporting having seen cube there

times, twice on plantations and once wild. Neither time in flower or fruit. About 3:30 the boy took me upstream on this side into some swell jungle. However, as it was getting late and the mosquitos were coming out, we did not work later than 5.

Mon. July 15. An interesting old Chumeku, named Valeriu, took me out from 8:30 to 2:30, to his chacra beyond our turning point of yesterday. Saw "cube" twice wild. Here it is called "barbasco" or more generally coñapi [or coñape?]. It was distinctly a woody vine, with the stem ± 4 ft above ground 4" thick. The man says it is the same plant as that growing at chacras, and surely the foliage looks it. Perhaps the thing climbs when it has supports (as trees & shrubs) nearby. Tomorrow I am going to see some cultivated. This was a real jungle. Most striking thing was the aroids, climbing up trees (Philodendron, whereas

elsewhere in Peru we have seen mostly Cauchuma). Only a very few were in flower however. As usual, there were quantities of Rutaceae, Melastomaceae, & Piperaceae. My guide certainly knew the woods, making a big detour thru them and striking the trail right where we had left a bundle. While I was putting these in bale in the p.m., he brought me several plants of "coñahi", from a plantation just west of here. Took like the wild plant of earlier in the day, tho I have not compared them in detail.

Tues. July 16. Valerio and 9 were paddled upstream and across by a couple of Chuncho to a banana plantation. From there we walked southeastward to an abandoned (the whole family had been drowned the year before in the rapids that almost upset us on our way down!) chacra where barbasco (Cracca toxicana) was growing. Saw about 10 plants. Then we

continued on to another chacra (formerly Valerio's) where he had set out about half a dozen coñapi plants. One I photoed; this was 7 ft high, straight stem, somewhat resembling coffee plant, and exactly like plants at La Merced. At the summit of the straight part the stem bent over toward a tree which it encircled upward to 20 or 30 ft, now a true vine. This seems to account for the varied descriptions of "cube" as a vine and a shrub. Walked back along the beach, collecting in all a couple of bundles. S. went out in p.m. across the small river entering the Pichis just above here, and returned with four packages. Later dealed on Señora Riviera, the "boss" of this region, who is to supply us with a canoe for the trip to Cahuapanas. She fortunately had kerosene, and sold me enough to run the stoves another 24 hrs. We were all out and had

bought all the owner of our tambo was willing to seel.

Wed. July 17. Another day of hanging around, such as last days at a station usually are. I went out, however, for a couple of hours and found about five things I had not seen before. S. probably got them yesterday, tho. A word about Valerio and his family. Has a wife and four children, very bright people, chubby-go-lucky, their faces full of expression. These Chuncho are not the storied Indians one hears of in the States, but laughing and kidding all the time, I showed them the few photos I had.

Thurs. July 18. Left P. Bermudez 8 a.m. in canoe of Señora Riviera. Steersman was Francisco (Pancho) an excellent boy in the woods as well as an expert boatman. He knew the river well and took the fast water well. S. & I sat on the top of the tambo getting as

tanned as possible. Stopped about 1:30 at the only house between P.B. and Calmapamas, that of Sr. _____, called "El Triunfo." About 25 plants of "cube" growing on the islands. Said to be 4 yrs. old, but were cut back and none were much over 4 ft. high. Plucked 6 made specimen of these. About 20 minutes here, then on down till 4:30 we reached a sandy beach (playa) where we camped for the night. Pleasant memories of this. Of the 3 paddlers with us, ~~one~~ two guarded boat and fished, while Pancho, the other, ~~S. o~~ and I went hunting, S. & I accompanying them into the forest a short distance. Poor collecting as we two returned along beach, getting a few things. Pancho returned later with turkey, game but with a nest (about 16) of turtle (charapa) eggs. For supper we had these, fish (fishing was fine!), soup, and chocolate, a real banquet. Sand flies were bad just at sundown, but then disappeared. Moon was nearly full and it was a glorious night."

We slept with pink our cots and mosquito bars. At 3:30 a.m. heard thunder but slept till 4:30 when he seemed as if it surely would rain. Got up, had breakfast, packed, and were off at just 6. Both of these days there were many jungle sounds, birds of all kinds, mostly screeching, howler monkeys, and other animals. The plants bordering on the river seemed much the same all the way. We collected a few things, mostly on the two occasions when the boys stopped to hunt. They killed three monkeys and captured alive a little black one. He wept a lot, and kept falling overboard. We didn't particularly enjoy the sight or smell of the dead monkeys in the bow of the boat, nor the thot of possible insects from them that might get in our baggage. Only a few drops of rain fell all day and we added to our sunburn. Reached Calmapaios at 5 p.m., a prelentious

settlement, high up on the river bank, consisting of four houses, one a fine tin-roofed, screened affair where the two families of missionaries lived. This is a mission, run by interdenominationists, the head R.O. Stull and Steiner his assistant. Nice to have an American supper, after which we rigged up two stoves with the plants not dryed at P. Bermudez.

Sat. July 20. S. took a man and a boy and paddled up and across stream to a chacra where a few plants of "cubo" were growing, one to three feet high, apparently planted this year. Another Indian took me into the jungle back of the settlement and we had quite a good day, not returning till 2 pm, and getting 6 bundles. Acanthaceae, Cyclanthaceae, Piper, and ferns predominated. This is no way to collect these Amazonian jungles. We should cut down trees and get fewer but more characteristic specimens. Three times I saw flowers on

the ground or arising from the lower part of the trunk of high trees or woody vines, the foliage not being obtainable or even visible. Could either of these be "cubs"? In the p.m. got all these plants over the three stoves. In evening visited with our hosts, reading U.S. papers. The motor canoe ~~Sun. July~~ bearing mail passed by about 3 p.m., going upstream to meet the mail being brought from P. Bermudez. We have to be ready to leave any moment that it returns, an awkward situation while drying to dry plants or this our last opportunity to use stoves before Iquitos.

Sun. July 21. Hung around all morning waiting for the plants to dry. Our house, a thatched one, has four rooms and a big central "hall" which serves ~~and~~ as a school week-days and a Sunday-school today. 34 Indians were at the services, one of the missionaries playing

hymns on an accordion. I suppose it is a rotten thing to comment on one's hosts, but a few remarks are I can't resist making. Missionaries are the same the world over, I suppose, quite a different species than we two or my friends in Washington. Each family here has a child and all spoiled children! especially the boy! They bang away and cry at the table, pounded the floor with Al's flashlight, drove a go-cart into the dining room table, etc. No Christian would allow his children to raise hell before company the way these Christians do! And dogs! One has just had some pups and attacks everything and everybody. Another dog wakes us up every morning howling near our cots. Another trait of these followers of Christ is their keen delight in the killing of animals; tell about dogs driving deer into the river and forcing them downstream till shot. ~~by~~ - I haven't yet

talked Pacifism to them but I bet they wld react just like Dennis. "It is sweet and pleasant to die for one's country", as Horace says. I have an idea that science and scientists do still interest them much: memories of Darwin and Tennessee still ramble. All is dilating on this general subject, so see his Journal. There is a tienda here, at which we bought candles, soap, stationery, matches but not cigarets or cigars! About 4 p.m. motor came with mail arrived
June 22. from upriver. We rushed to get the plants off and packed but learned it was to stay overnight as we took our time at this. The Commandante, Sa. Rotiez (Rotier, in French) is very obliging. Received a letter from Joyce & Wm, somehow slipped out of the Iquitos mail for me. After supper read the latest U.S. papers, up to June 18. Glad to learn the athletics are stacking the Yankees. Sorry Washington is so rotten this year. While in the midst of this services started and for politeness we had to stick around. Hymns were sung in

Spanish, a sermon given by Mrs. Steed, and a prayer by Steiner. About 20 travelers are spending the night here, going both directions.

Mon. July 22. Our hosts did not want to charge anything but 4 pesos for their taking a libra as a contribution to their work. They are very hospitable and we appreciate their taking us in. Left about 7:30 a.m., in the motor canoe with two other canoes on each side. Touched at P. Victoria, the main house most elaborate building of native architecture I have ever seen. It is a German colony. No cube on the place but natives, said to cultivate it on account their chacras. Apparently is Cubo A. Made one or two other stops, reaching a playa (Huacamayo) where the steamer "Atahualpa" had been left. It is a boat about 30 ft. long, just one deck but a hold 4 or 5 feet deep in which was placed our baggage not needed and the mail. There is little room on the ship and it must be kept when there are a lot of passengers. Now there are only two others — Peruvians, ~~&~~ The ship's [illegible]

was put up on the sandy beach and we four slept there.

Tues. July 23. Boats whistle got us up about 5 a.m., but before leaving I got about four plants near the camp, our first Loreto specimens. Took on wood once and I got a Bauhinia. Then with no stops till Puerto Lira, the Commandante's house, where we stayed an hour. One of the boatmen went with me a short distance into the woods; we got about 5 numbers. Just below this is Puerto Leguia, on the right (Loreto) bank, the port of the "Colonizadora", a settlement owning a vast concession between the Ucayali, Pereno, and Pachitea rivers. A road connecting with Huanuco is being built here, and it going to be finished, it is said, in two years. A new settlement with several buildings. Met Mr. Ludwig, an English engineer and Tomenotti, the general manager of the Colony who was up from Lima. Says all kinds of fish poisons grow about here and was much interested in the possibility of growing cube

commercially. Reputed that a Mr. Terry, a town below knew a lot about these plants, so the Commandante promised to try and make the place at night. Wood was piled on the fires, and hot cinders belched forth, quite a sight in these wilds to see a steamer lost in a cube chaos. However, clouds came up to obscure the moon and it was impossible to go much after dark. So we camped again on a playa. Should have said that we had a swell drink at P. Zuquia, some sort of a punch. Tomenotti is an Italio-American.

Wed. July 24. Up at 4:30 and soon were hurrying on, reaching Terrys place about 5:30. He is a lanky Westerner who bought land in the colonization project, but until the road is completed, "it vales" little. Had "barbared" in his yard and it was Clitadium op. Said & others were used by the natives to fish with. The two most potent he described

as a shrub resembling coffee which "does not bear flowers or fruit", - certainly our Cube A - and a shrub (?) with red berries and leaves "broadest toward the ends. Up both the roots are used. Gave him five soles to collect and send us in 7 quintos specimens of all these fish poisons. This would have been a fine place to stay for cube information, but it was not practicable to embark as all arrangements had been made for Marisca. Ferry, too, was interested in the possibility of growing cubs. In the p.m. we picked up another tender, a larger boat than our steam launch, and it was attached to the side. Now have more room. Slept on board this night, tied up at the bank.

Thurs. July 25. Swung into the Ucayali at 9 a.m. - a broad river, and are to reach Marisca in 2½ hours. It has been a fine trip from Cahuapanas down, the amipaties commandante and good meals going a lot way toward making it

so. Reached Masisea about 10:45 a.m., a town with many native huts and a few modern govt bldgs., as Post Office, hangar, and Aviation Bldg. Radio station here and place where change is made from land plane from San Ramon to hydroplane for Iquitos. Looked up Sr. Vegas of whom Carlton had spoken but met over-sympathies; also the Governor, Sr. Vega. At 12:55 p.m. Carlton arrived bringing Dennis by air, having left San Ramon at 10:35 a.m. [Compare this with our time on the Pichis trail beginning June 28!] D. & I went out with the Governor and another man to see cube. A small plantation about 15 minutes from the town. "A few" plants, the one photoed planted last Dec. Ours Cube A but leaves only. Cleaned up and A. & I started a big party with Carlton which lasted thru supper and late on in the evening.

Fri. July 26. Hung around most of day waiting for boat to arrive from Iquitos.

finally learned it was stuck on a sandbar some hours down. We steamed toward them; tied up for night at bank. Lots of people on board and this shows how lucky we have been to have so few so far. Much crowded.

Sat. July 27. Went on to stranded steamer and finally got her off. Collected about three species here at Balmaniso. (Should have said I got about 30 day before yesterday on the cube limit at Maniara.

Steamers tied to each other and went back to Maniara to exchange cargo, etc. This steamer, the "Beatriz" is a large, 2-decked affair, tho no staterooms are available. However, there is plenty of room on deck and only a few passengers.

Sun.-Wed.

July 28-31. Steaming down the Ucayali River on the "Beatriz", a two-deck boat but with so many passengers that the extra room amounts to nothing. Sleep, eat, and live on deck, like emigrants.

The captain and ship officers have eggs and other extras which we passangers don't get.
Report on first 4 months of trip written to USNM.; also long letters to Yoqi and W.K.M. Principal stops at Contamana, Pupalca, and Riquina. Little opportunity for collecting, as the woods are so far from the towns. Entered Amazon about 11 p.m. the last of these days.

Thurs. Aug. 1. Docked at 7 and called on Mr. ~~Kerr~~ Ker of S.O. Co., head in Dr. Bassalein's absence. Turned over to us a small house on central plaza — several rooms, shower, etc.
Fri. Aug. 2. At market S. & I found two ~~persons~~ persons who knew where cube was growing. I went to one and found about 10 plants. This was a backyard on the outskirts of the city. O. went to San Juan, some miles above here, and saw 3 large chacras, estimating there were 10,000 individual trees.
Sat. Aug. 3. S. & I went west of here to Varsaille, seeing several plants of cube in ~~several~~ several chacras. Collected

many numbers. Rubs o
Melastomes abundant. There
were woods, not very dense,
sometimes wet, always quite
sandy. Our boy, Antonio
Vargas, is a wonder. He
collects lot we don't see.
Sun. Aug. 4. Stayed in to
work on yesterday's plants.
Looked the town over, a
beautiful city. Called on
Richter, of S.O. and saw
his tigers. Movie in evening.
Mon. Aug. 5. S.o 9 to San
Juan, so. of here at end of
an auto road. Very sandy
country, the sand pure
white. Good collecting.

Tues. Aug. 6. Stayed in and
worked.
Wed. Aug. 7. S.o 7 went ~~south~~ -
west of here to Lake
Moron-cocha, a long
narrow body of water
which with two rivers makes
almost an island of the
9 quintos region. Land about
lake often inundated and
collecting poor. Struck north
and came out a Versailles,
better collecting here but
auto terrible.
Thurs. Aug. 8. S.o 9 to
Puchano, north of here.
Surprisingly good collecting.
Real swamp Amazonian jungle

Fri. Aug. 9. D. & I went to San Juan, to look over barbareals, as cube plantations are called. Saw at least 10 different ones. Number of trees varied, from about 80, 175, 200, 250, 600, 600, 6000, mostly around 250. Rained hard but I got some good pictures. Not much time for general collecting.

Sat. Aug. 10. All went to island opposite Iquitos while I worked on yesterdays plants.

Sun. Aug. 11. I went beyond Puchana, not getting much but the stuff was good. Dense woods. Good movie in evening. A wonderful town, and hard to realize we are 2000 miles up the Amazon. Sitting in the plaza drinking beer and listening to a band concert was wonderful. We have been put up at the two clubs by Mr. Ker and enjoy the cocktails there.

Mon. Aug. 12. Now for a few days of hanging around waiting for things to dry before leaving for Yurimaguas. In evening dined with Dr. Bassler, a fine scientist. Swell library. We are to look over the Iquitos collection here.

Tues. Aug. 13. 8.09 went
west of here, swung around
to Puchana; got 21 minutes,
not quite enough to bring our
total to 6000.
Wed. Aug. 14 – Sat. Aug. 17. Just
lying around 9 quite, waiting
for plants to dry. Boat was
to leave the 16th but postponed
a day. Main thing accomplished
was going over the season's
herb., photographing all
types.

S

Apr. 15 - 6:15 am. July 10. 6 pm.
17 - 11 am 17. 4 pm.
21 - 5 pm 21. 3 pm.
23 - 4 pm 25 3 pm
26 - 6 pm
28 - 4 pm
May 16 - 4 pm.
22 - 5 pm
24 - 8 am
25 - 8 am
June 4 - 2 pm.
12 - 6 pm
14 - 5 pm.
19 - 11 am.
21 - 5 pm.
23 - 11 am.
25 - 3 pm

Oroya
Supt Cde P - Pichahuy
Camp near Huacapistana
"Carpa de Palo"

had heard of plant but said it came from far away.

Apr. 8. Same dope at Trujillo market.

Apr. 10. Weberbauer says cube common in Chinchamayo + that it is Tephrosia sp.

Apr. 15. Mr. Morkin, of Ferrocarril Central, on train, says he knew cube in Cuzco where he was with Bingham. Said it was a shrub with narrow entire lvs.

Apr. 18. Dr. Zavala, ~~President of La Merced~~ at Tarma. There are 2 kinds of plants used by Indians: "cube" ~~de~~ of Chanchamayo - true ± 5m.; simple lvs. Roots when cut have a creamy germ.

M plsg. 61 - 23053 is cube de almedon (or top muting cube 23189

("barbasco" of Chanchamayo lvs. like clover, 4-5 ft. high, white flo. [This may be Tephrosia toxicaria - Erik]

History of "Cube":

In summer of 1928 S.P. received letter from W.J.D. asking information about "cube". Could find nothing. Wrote Macbride who said he knew of plant but not what it was. Suggested Lophiocaria toxicaria tho that was scarcely a shrub 5 ft high, as cube was reported to be.

After this materialized other suggestions made: Gleason - Clibadium; Rusby: Serjania or ally; others Jacquinia Barbasco.

Apr. 7. At Talara market